

## WE CLAIM:

- 1 1. A broadband telephony system, comprising:  
2 a plurality of remote endpoint devices coupled to a broadband data network;  
3 a plurality of remote PSTNs coupled between the plurality of remote endpoint  
4 devices and a plurality of remote audio interfaces, each remote endpoint device being  
5 coupled to one remote PSTN, each remote PSTN being coupled to more than one remote  
6 endpoint device, each remote PSTN being coupled to at least one remote audio interface,  
7 and each remote audio interface being coupled to one remote PSTN;  
8 an originating endpoint device coupled between the broadband data network and a  
9 local audio interface adapted to communicate an audio signal, the originating endpoint  
10 device adapted to select a destination audio interface for delivery of the audio signal, the  
11 destination audio interface being one of the plurality of remote audio interfaces; and  
12 a database coupled to the broadband data network and adapted determine an  
13 optimized path for the audio signal from the originating endpoint device to the destination  
14 audio interface by correlating each remote audio interface with one of the plurality of remote  
15 PSTNs, and correlating each of the plurality of remote endpoint devices with one of the  
16 plurality of remote PSTNs.
- 1 2. The broadband telephony system of claim 1, wherein the optimized path includes a  
2 destination endpoint device wherein the destination endpoint device is one of the plurality of  
3 remote endpoint devices being correlated to a destination PSTN, the destination PSTN being  
4 one of the plurality of remote PSTNs being uniquely correlated to the destination audio  
5 interface.
- 1 3. The broadband telephony system of claim 2, wherein the optimized path is a cost-  
2 optimized path.
- 1 4. The broadband telephony system of claim 2, wherein the optimized path includes a  
2 pre-defined path portion.

1 5. The broadband telephony system of claim 2, further comprising a local PSTN  
2 coupled between the originating endpoint device and the local audio interface, wherein the  
3 local audio interface is adapted to designate an identifier associated with a destination audio  
4 interface and communicate the identifier to the originating endpoint device through the local  
5 PSTN, and the originating endpoint device is adapted to select the destination audio  
6 interface responsive to the identifier designated by the local audio interface.

1 6. The broadband telephony system of claim 2, wherein the destination audio interface  
2 is coupled to the destination endpoint device.

1 7. A broadband telephony system, comprising:  
2 a plurality of remote endpoint devices coupled to a broadband data network;  
3 a plurality of remote PSTNs coupled to the plurality of remote endpoint devices,  
4 each remote endpoint device being coupled to one remote PSTN, each PSTN being coupled  
5 to more than one remote endpoint device, each remote endpoint device being coupled to one  
6 of a plurality of remote audio interfaces;  
7 an originating endpoint device coupled between the broadband data network and a  
8 local audio interface adapted to communicate an audio signal, the originating endpoint  
9 device adapted to select a destination audio interface for delivery of the audio signal, the  
10 destination audio interface being one of the plurality of remote audio interfaces; and  
11 a database coupled to the broadband data network and adapted determine an  
12 optimized path for the audio signal from the originating endpoint device to the destination  
13 audio interface.

1 8. The broadband telephony system of claim 7, wherein the database is adapted to  
2 uniquely correlating each remote audio interface with one of the plurality of remote endpoint  
3 devices, and the optimized path includes a destination endpoint device wherein the  
4 destination endpoint device is one of the plurality of remote endpoint devices being  
5 correlated to the destination audio interface.

1 9. The broadband telephony system of claim 8, wherein the optimized path is a cost-  
2 optimized path.

1 10. The broadband telephony system of claim 8, wherein the optimized path includes a  
2 pre-defined path portion.

1 11. The broadband telephony system of claim 8, further comprising a local PSTN  
2 coupled between the originating endpoint device and the local audio interface, wherein the  
3 local audio interface is adapted to designate an identifier associated with a destination audio  
4 interface and communicate the identifier to the originating endpoint device through the local  
5 PSTN, and the originating endpoint device is adapted to select the destination audio  
6 interface responsive to the identifier designated by the local audio interface.

1 12. A method of sharing resources of a broadband telephony system, the method  
2 comprising:  
3 registering with a registrar database information from a plurality of user-provided  
4 gateways, each gateway coupled to a broadband data network and one of a plurality of  
5 regional telephone networks, and each of the plurality of regional telephone networks  
6 coupled to more than one gateway;  
7 storing in the registrar database correlation information associating each of a  
8 plurality of audio interfaces and each gateway with one of the plurality of regional telephone  
9 networks;  
10 exchanging with a plurality of other users, use of one user-provided gateway as a  
11 remote network-terminating gateway for access to the registrar database and use of other  
12 user-provided gateways as remote terminating gateways.

13. The method of claim 12, further comprising:

selecting a destination audio interface;

routing a request from an originating gateway to the registrar database for access to the destination audio interface;

5 determining an optimized network path from the originating gateway to the destination audio interface, the optimized network path including a destination gateway, the destination gateway being one of the plurality of user-provided gateways associated with the regional telephone network associated with the destination audio interface.

10 13. The method of claim 12, further comprising:

restricting use to the plurality of other users, of a user's gateway as a remote network-terminating gateway to a pre-determined maximum elapsed time within a periodic interval.

15 14. The method of claim 12, further comprising:

restricting use to the plurality of other users, of a user's gateway as a remote network-terminating gateway to a pre-determined maximum number of calls

15. The method of claim 12, further comprising:

20 restricting use to the plurality of other users, of a user's gateway as a remote network-terminating gateway to a pre-determined maximum elapsed time differential between a duration of calls originated by the user's gateway and a duration of calls terminated by the user's gateway.

25 16. The method of claim 12, further comprising:

restricting use of a user's gateway as a call-originating gateway to a pre-determined maximum elapsed time differential between a duration of calls originated by the user's gateway and a duration of calls terminated by the user's gateway.